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ABSTRACT

Proponents of management information systems (MIS) have traditionally held that educational administrators are in need of better management information with which to make more informed planning and policy decisions. However, few successful implementations have been reported. Literature discussing the lack of success of MIS point to such factors as lack of commitment by top management and insufficient resources for failure. The following alternative explanation is proposed: MIS efforts in higher education will continue to experience frustration because their success requires the existence of a viable management. The contention expressed is that most institutions of higher education are not managed but rather administered. This distinction is responsible for many of the perceived MIS failures. Two case studies are provided to illustrate the arguments developed. Decisions in higher education are described as predominantly political, as opposed to managerial. The purposes and characteristics of administrative (political) decision information are contrasted with management information, and fundamental differences are outlined in table form. The conclusion is offered that higher education would be better served if resources were directed less toward traditional MIS development and more toward the development of administrative information systems designed to assist in responding effectively to political pressure. (Author)

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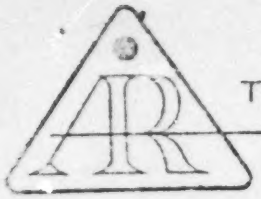

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Abstract

The proponents of management information systems (MIS) have traditionally held that educational administrators are in need of better management information with which to make more informed planning and policy decisions. However, while efforts to develop MIS for university administrators continue at various institutions, few (if any) successful implementations have been reported.

Literature discussing the lack of success of MIS point to such factors as lack of commitment by top management and insufficient resources as reasons for failure. The following alternative explanation is proposed: MIS efforts in higher education will continue to experience frustration because their success requires the existence of a viable management. The contention expressed is that most institutions of higher education are not managed; but rather administered. This distinction, largely ignored by the proponents of MIS, is responsible for many of the perceived MIS failures.

In the paper, two case studies are provided to illustrate the arguments which are developed. Decisions in higher education are described as predominantely political, as opposed to managerial. The purposes and characteristics of administrative (political) decision information are contrasted with management information, and fundamental differences outlined in table form.

The conclusion is offered that higher education would be better served if resources were directed less toward traditional MIS development and more toward the development of administrative information systems designed to assist in responding effectively to political pressures.

INFORMATION WILL NOT MAKE YOU WELL:

MIS RE-EXAMINED

For the past several years, there has been widespread interest in the applications of management science to the administration of higher education in the United States. As higher education became larger and more complex during the growth period of the 1960's, urgency and impetus fueled the rush to implement quantitative management practices. Higher education, it was argued, could be better operated if only better information was available.

As the desire for better information became more pronounced, interest began to focus on the concept of management information system (MIS). Here was a device with a history of success in business and the military. Many universities and colleges began MIS implementation efforts. Computer software companies developed and marketed MIS packages for use in higher education. The National Center for Higher Education Management Systems was established. In addition, the Federal Government began to provide funding for specific MIS projects in higher education (the latest of which is a Data Core to provide information regarding federal issues in postsecondary education.)

Unfortunately, our experience with college and university MIS applications has identified few, if any, unqualified successes. All too often, extensive MIS implementation efforts have culminated in copious computer printout with no discernable impact upon decision-making. Ironically, it may be that the information produced by the higher education MIS is right, but irrelevant.

MIS Defined

It has long been recognized that all organizations have information systems; whether formal or informal, systematic or unsystematic, effective or ineffective. In a very real sense, the communication of information is the sine qua non of social organization. However, not all organizations (including business organizations) have management information systems.

The term management information system will be considered to be a system designed to provide information for use by managers in decision-making. Such a system produces information regarding: (1) future states of a process, (2) control of a process, and (3) measurement of a process. Information of these types assist managers in deciding: (1) what to do, (2) when to intervene, and (3) how well things are going.

A good example of a management information system would be a computer assisted scientific inventory system. A typical scientific inventory system has a simulation/projection component which generates information regarding costs of various inventory service levels. In addition the system has a control component which signals stockout conditions and warns of overdue orders. Finally, the system has a measurement component which produces information regarding the overall performance of the system. In each case, information is being produced which is of use to management in making decisions regarding inventory operations.

The Unquestioned Assumption

Hayman (1974, p. 62), Balk (1971, p. 35), Parden (1976, p. 161) and others have identified several causes for MIS failure in higher education:

(1) lack of commitment by top management, (2) insufficient understanding and appreciation of MIS-type information, (3) inadequate resources, (4) personnel turnover, and (5) insensitivity to human/political problems. While each of these circumstances can undermine an MIS effort, in the context of higher education they are usually symptomatic of a more fundamental difficulty.

At the very essence of the MIS concept is the assumption that there exists a set of individuals invested with management responsibility; a group of "managers" in need of certain types of information if they are to function effectively. If this assumption does not have validity in higher education, then the applicability of MIS to higher education is open to serious question.

It is clear from the literature on MIS in higher education that there is a general, uncritical acceptance of this management assumption. Simply put, the proponents of MIS for higher education assume that higher education can and should be managed; that there is an individual or group of individuals within each institution who have been given management responsibility; that these individuals, if not already doing so, will behave like managers if given the necessary tools. One such necessary tool is better, more timely information.

For example, a recent publication, Quantitative Approaches to Higher Education Management (Lawrence et al., 1977) contains over 250 references in eighty pages of text to "management" or "top-level management." Many other MIS-oriented articles have appeared in the literature on higher education in which frequent reference is made to the term, "management." The following statements are typical:

While perceptions of success were less than

> positive, respondents did transmit positive indications that models can contribute to managing an institution of higher education . . . (Plourde, 1976, p. 215)
>
> MIS is Alive, Well and Ready for Academe . . . One of the fundamental conclusions that emerges from our MIS work is that the processes of educational reform begin in the minds and hearts of educational managers. (Levine and Mowbray, 1976, pp 24-25)
>
> Because of the university's tight financial situation, particular emphasis was to be given to providing better information on program costs to university management. (Kornfeld, 1971, p. 33)

These statements and others like them represent more than just a casual interchange of the terms "administration" and "management." Each was drawn from a context in which it was clearly implied that university administrators are, in fact, managers (or should be); that these "managers" can perform adequately only if the right kinds of information are placed at their disposal on a timely basis.

Administration--Not Management

The management assumption reflects a basic misconception regarding college and university operations. Administrators perform different functions, behave differently and require different kinds of information than do managers. Peter Drucker (1974, p. 139) suggests that it is primarily the nature of the organization that determines whether administration or management is the most appropriate form of leadership.

The differences between managed systems and administered systems are frequently recognized in the lay press; government is administered, business is managed and education, at all levels, is administered. The frustration

often experienced by business executives who have moved into government services reinforces the importance of differences in leadership style. Many of these executives have achieved outstanding success as business managers, yet once having entered government service, the result is frequently a failure to perform. It is apparent that effective leadership is not the same for the two types of system.

The basic difference between the administered institution and one in which management behavior is possible and appropriate is the revenue source. Managed systems depend upon the client for revenue; administered systems are budget based, i.e., legislative appropriation. Drucker (1974, p. 142) has shown that allocation by the budget misdirects; success becomes identified with the size of the appropriation, rather than with performance and results as defined by the client. In fact, the response to a lack of performance by public agencies (including universities) is often a request for a larger appropriation rather than to change or discontinue an activity or program which is unproductive.

Two recent case studies drawn from higher education illustrate some of the major differences between managed and administered institutions.

Case Study I

The setting is a large private university in an urban environment. Since tuition income is necessary for continued operation, much emphasis is placed on enrollment.

The director of an academic program within one of the schools of the university was confronted with the need to increase enrollment in order to maintain the viability of his program. For years, enrollment in this program

had been relatively stable and the program had come to depend heavily on tuition income derived from courses of other disciplines offered through the program by special arrangement. The program director was concerned about the possible loss of this revenue (60% of the gross) should the parent departments, out of the necessity to increase their own tuition revenue, refuse permission to offer these courses at some time in the future.

To increase enrollment in the courses offered by his academic program, the director established specific enrollment objectives. Projected enrollments were developed for each class included in the preliminary class schedule. The projection revealed that there was insufficient enrollment potential in the preliminary class schedule to provide a reasonably good chance of achieving the objectives.

As a result, the director added more class sections, rescheduled popular classes into larger rooms at preferred days and times, implemented a weekend schedule and developed a program of intensified coursework. The enrollment objectives were met and surpassed.

Today, that academic program is strong and viable. It exists entirely on tuition revenue produced by its own courses; the other courses having long since been withdrawn by their respective departments.

It is suggested that the preceding example is the exception rather than the rule in contemporary higher education. Of note is the private nature of the institution and its dependence on tuition revenue. These conditions helped establish a natural framework for the selection of enrollment targets to guide decisions. In addition, the program director has suffieient autonomy to effect program changes by means of management decisions aimed

at realizing the selected targets. He was also aware that evaluation of his performance would be based to a considerable degree on success in increasing enrollment levels. In this context, MIS-type information is critical to the decision-making process.

Case Study II

The setting is a large public university in an urban environment . Enrollment is important because the level of funding for the operating budget of the university is based on the number of fulltime equivalent students. The budget is developed using a long-range enrollment forecast and a payback is required if actual enrollment is less than the forecasted budgeted enrollment.

An MIS was developed which would project enrollment based on the preliminary class schedule. Before publication of the printed class schedule, it was possible to compare the class schedule-based enrollment projection against the forecasted enrollment used in developing the university budget.

There was no one person responsible for university enrollment. Class schedules were developed by the academic departments and coordinated by the administration. Enrollment had never been a problem; rapid growth had characterized the relatively brief history of the institution.

One year, the enrollment forecast based on preliminary class schedule indicated (for the first time) that the university did not have suffieient enrollment potential in the preliminary class schedule to have a high probability of realizing enrollment. Administrative discussion occurred, but no action was taken. Enrollment for that semester was well under the budgeted enrollment and substantial payback was required.

It is suggested that the inertia illustrated in this example is typical of contemporary higher education. Here is a situation in which MIS-type information should have had an impact on university operations. This university was an administered system; the necessary conditions for management behavior simply did not exist. Decision-making was consensus-based and responsibility, diluted. Thus, action was not taken and the projected enrollment deficit became reality.

Enter Politics

In theory, management decisions are made on the basis of the individual manager's assessment of environmental factors (such as evidence of demand for the product of service, costs of raw materials, etc.) and performance data (such as statistics reflecting current levels of production or service, data on operating costs, etc.). As illustrated in Case Study I, MIS-type information is critical to successful decision-making under these circumstances.

Research has repeatedly substantiated that one of the essential elements of the management decision-making process is usually missing in higher education, specific goals and objectives. For example, Palola and Padgett (1971, pp. 13-14) concluded from the results of a major study that one of the central planning problems facing higher education is "goal evasion"; that goals in higher education are typically stated in intangible, immeasurable and nonoperational terms.

In the absence of specific measurable goals and objectives, operating decisions are derived from a process of political interaction in which the competing interests of affected individuals are weighed by administrators in

an attempt to arrive at an acceptable (as opposed to goal-oriented) outcome. Consensus is preferable to the often unpleasant demands of "effectiveness"; compromise takes precedence over performance and results.

This analysis is consistent with the conclusion of Weathersby and Jacobs (1977, p. 28), as well as others. In their view decision-making in higher education is responsive (political) rather than proactive (management).

> In most instances, the governance system and decision-making process in educational institutions respond to rather than initiate policy related to aspirations and expectations. No one person or group is in control of the organic and orderly development of a set of aspirations. This is because the process is neither organic or orderly; It is "pressure responsive," driven most by those individuals, groups, forces and circumstances who choose to assert themselves.

True management decisions are inappropriate in a "pressure responsive" environment. Successful administration requires the support of key participants and this requirement operates to preclude the possibility of effective management action. Ultimately, an administrator may influence the eventual outcome, but usually through careful political position building--rarely in the decisive role of the manager.

Implications for Information Systems

Given the proposition that leadership in higher education is something other than management, it is little wonder that MIS efforts have been perceived as generally less than successful. It can be expected that goals and objectives will continue to be ambiguous and elusive because they are derived from a process of political interplay with ever-changing ground rules

and expectations. Thus, in the absence of specified goals and objectives, MIS design will continue to be difficult because MIS depends on clearly defined objectives to guide the design effort. Even if MIS information is produced, it may appear that it is not being used.

In short, the purposes and characteristics of information needed for effective administration are substantially different than for traditional management information. These basic differences are summarized in chart form in Table 1.

Summary

In the final analysis, the principle focus of management information is problem-solving, while political decision information should be based on the concept of position building. Unfortunately, the work of MIS developers in higher education has resulted in an attempt to provide management solutions to political problems. In the words of Keen and Gerson (1977, p. 81), "Technical responses to political problems are a misapplication of resources, attention, and expertise."

An information system based on position building might appropriately be designated an Administrative Information System (AIS). In some circumstances, outputs from the same kinds of computer software proposed for use in the university MIS (such as the NCHEMS products)will be useful. Other applications will require greater flexibility and will have much less structure. In either case, the nature of political decision-making will dictate that interactive processing and rapid response be the essential elements.

Finally, it should be remembered that the nature and purpose of management information is different from information required for political

TABLE 1

BASIC DIFFERENCES BETWEEN MANAGEMENT AND ADMINISTRATIVE INFORMATION

	MANAGEMENT INFORMATION	ADMINISTRATIVE INFORMATION
Principle Focus	Problem-solving (goal accomplishment)	Position building (viable agreements)
Basic Purposes	1. Project future states and develop alternatives (refine management choices)	1. Project future states and develop alternatives (define political strategies)
	2. Control process	2. Respond to political pressure
	3. Measure performance (application of norms or standards)	3. Count/record activity (accumulate historical data)
Characteristics	1. Systematic recurring reports	1. Primarily "one-time" requests
	2. Stable format (preferred for consistency and longitudinal validity)	2. Flexible format (required to respond to changing demands)
	3. High accuracy (minimal estimation)	3. High accuracy often not required (sometimes disadvantageous, where an informed estimate is sufficient)
	4. Timeliness required	4. Timeliness critical (ability to respond sometimes more important than exact nature of response)
	5. Goal-driven(internal concerns)	5. Issue-driven (external concerns)

position building. Much of the disillusionment with MIS efforts in higher education can be traced to false assumptions and expectations. If we continue, in higher education, to evaluate MIS on the basis of problem-solving (management) criteria rather than position building (political) criteria, failure and frustration will be the inevitable result. Such mis-assessment could well obscure the important contributions to higher education that can be attained through the judicious use of information systems.

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